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Effects of Certain Methods of Feeding and Managing Rabbits in Commercial Fryer Production

By GEORGE S. TEMPLETON, *Director, U. S. Rabbit Experiment Station, Fontana, Calif., Bureau of Animal Industry, Agricultural Research Administration*

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INTRODUCTION

More than 40 million pounds of domestic rabbit meat is being consumed annually in the United States. Consumers like fryer rabbits best. The size of the carcass, 2 to 2½ pounds, meets the average family's requirements and is easily and quickly prepared for the table. For fryer production, medium- to heavy-weight breeds are preferred, as they weigh 4 pounds, live weight, and have attained a desired finish when they are weaned at 2 months of age. They may then be marketed and should yield a carcass, including liver and heart, that weighs 50 to 59 percent of the weight of the live animal. Of the carcass, 78 to 80 percent is edible.

In recent years the market trend has been toward fryers weighing more than 4 pounds. Many housewives prefer a heavier rabbit, and processors have encouraged breeders to keep their fryers until they average 4½ to 5 pounds in live weight. It costs a little more to collect and slaughter the heavier fryers, but they provide more meat and

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larger pelts. This change has raised a question as to the most desirable weight at which to market fryers.

Skins of the white breeds bring the highest prices.

Proper handling of the does in the breeding herd is the chief concern of all rabbit breeders, especially commercial breeders who specialize in producing fryer rabbits.

Several factors enter into the development of a satisfactory plan for caring for the herd. As hutch equipment is expensive, it is important to consider not only production per doe but also production per hutch per year, for, if the young are not ready for market when they are removed from the doe's hutch, additional equipment and labor will be necessary.

Giving does free access to a No. 2 leafy, or better, grade of alfalfa hay and to a feed hopper filled with a complete ration in pellet form has proved a satisfactory method of feeding during the last 17 days of the gestation period. Many breeders, however, may not be equipped to feed pellets in hoppers, or they may prefer to feed by hand.

The purpose of the experiment reported here was to obtain information on the following phases of the commercial production of fryer rabbits: Equipment and herd management to reduce man-hours of labor per doe per year; feeding methods to keep does in desirable physical condition and produce fryers of desired weight and condition; the best weight at which to market fryers; and a breeding schedule to make possible the production of maximum poundage of fryers most economically. The experiment, conducted at the United States Experiment Station, Fontana, Calif., was begun March 18, 1948, and ended October 18, 1949.

HUTCHES AND EQUIPMENT

The rabbits were housed in all-metal hutches, of electro-spot-welded wire fabric, 1- by 2-inch mesh, with two compartments, set up in double tiers. A hay manger between the two compartments had a labor-saving opening to the feeding aisle. A drawer-type trough under the manger, which conserved shattered hay leaves, was used for hand-feeding concentrates in restricted quantities to developing junior does and bucks and to herd bucks. An automatic watering system (fig. 1) supplied fresh, clean water at all times. The hutch floors were of 20-gage galvanized steel, perforated with 5/8-inch square holes, 7/8-inch on center both ways.

A feed hopper made from a 5-gallon can (fig. 2) was used for full-feeding the pelleted portion of the ration to pregnant does and does with nursing litters. (Farmers' Bulletin 1730, Rabbit Production, gives details of construction of the feed hopper.)

PRELIMINARY FEEDING OF JUNIOR BUCKS AND DOES

The New Zealand White bucks and does used in the experiment were so fed that they made good growth and were in desirable physical condition when bred at 6 months of age. They were fed 2 1/2 ounces of the complete pellets daily and given free access to a No. 2 leafy, or better, grade of alfalfa hay. As the rabbits developed they con-

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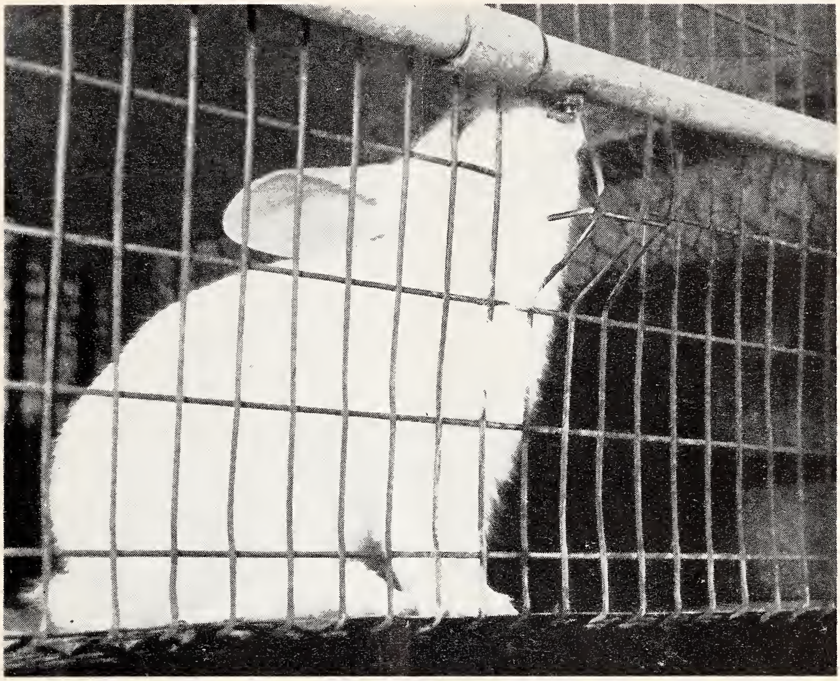

Figure 1.—Young rabbit drinking from automatic waterer. The wire mesh has been cut and bent back to make the valve accessible to the rabbit. As the valve is outside the hutch, water will not drip on the rabbit or on the floor of the hutch.

sumed a larger quantity of hay to obtain the additional nutrients needed for growth.

The gains in live weight, from weaning to 6 months of age, of 13 bucks and 25 does fed according to this schedule were as follows (fig. 3): The bucks that averaged 4.29 pounds at weaning—10 at 59 days, 2 at 58 days, and 1 at 57 days—averaged 8.20 pounds at 185 days; the does that averaged 4.48 pounds at weaning—20 at 59 days, 4 at 58 days, and 1 at 57 days—averaged 8.98 pounds at 185 days. The individual animals varied somewhat in weight at the different stages of development, but all were well developed, firm in flesh, and in good condition for beginning production.

During the developing period the bucks and does each consumed 19 pounds of the complete pellets. The bucks each consumed 30 pounds of hay; the does, 34 pounds.

ANIMALS USED AND THEIR MANAGEMENT

The forty-eight 6-month-old New Zealand White does selected for the experiment were uniform, nicely developed, and firm in flesh. They averaged 9⅓ pounds, and were ready to be mated. They were divided into 3 lots of 16 does each. Does in lots 1 and 2 were bred on a 56- and those in lot 3 on a 42-day schedule. They produced 2,107 young in 278 litters.

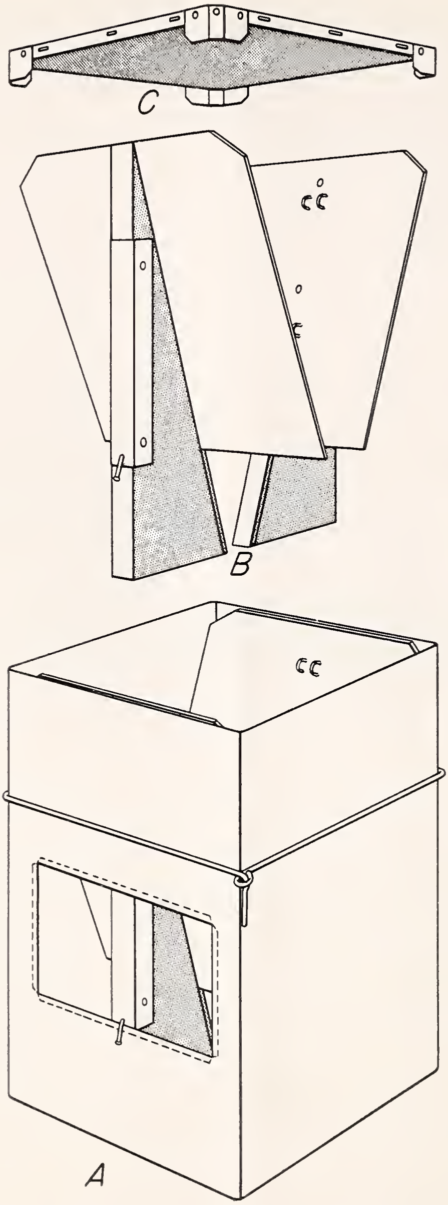

Figure 2.—Feed hopper made from a 5-gallon can: *A*, Feed hopper; *B*, the two baffles withdrawn from the feed hopper; *C*, lid.

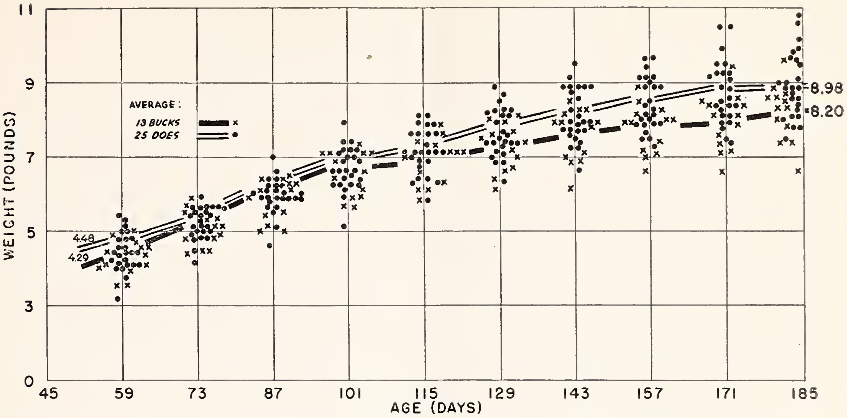

Figure 3.—Bimonthly weight record, from weaning at 2 months to 6 months of age, of 13 New Zealand White bucks and 25 does, each fed 2½ ounces daily of a complete pellet and given free access to alfalfa hay.

Eight young were retained in each litter where possible, the young being transferred a day or two after kindling. All the does were weighed when the test was begun. The does and litters in lots 1 and 2 were weighed when the young were 56 and 64 days of age; those in lot 3, when they were 64 days of age. All feed was weighed and amounts recorded.

FEEDING EXPERIMENTAL ANIMALS

The 6-month-old does were fed only alfalfa hay until they were known to be pregnant, as determined by palpation 14 days after breeding.[1] For the remaining 17 days of the gestation period they were also fed complete (green) pellets. The does in lots 1 and 3 were full-fed the pellets in a feed hopper; those in lot 2 were hand-fed 4 ounces of pellets daily. From the time the does kindled until the fryers went to market, the does and litters in all lots had free access to a feed hopper charged with pellets and to alfalfa hay.

The pellets contained the following ingredients:

Ingredient:	*Pounds*
Soybean meal (44 percent protein)	500
Linseed meal (28 percent protein)	100
Alfalfa meal (15 percent protein)	1,200
Mill run (byproduct of flour manufacture) (14 percent protein)	400
Barley	500
Oats	100
Salt	15
Total	2,815

The percentage composition of the pellets was as follows: Crude protein, 20.8; crude fat, 3.7; fiber, 15.1; and minerals, 6.8.

The herd bucks were fed 2½ ounces of the complete pellet daily and had access to alfalfa hay throughout the experiment.

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[1] Suitor, Allan E. palpating domestic rabbits to determine pregnancy. U. S. Dept. Agr. Leaflet 245, 4 pp., illus. 1946.

HAND-FEEDING v. HOPPER-FEEDING OF PELLETS TO DOES THE LAST 17 DAYS OF PREGNANCY

Effect of Method of Feeding on Condition of Does and Young

When the tests began the does in the two lots weighed the same (table 1). The hand-fed does (lot 2) averaged 0.21 pound more than the hopper-fed does when their first litters were 56 days of age, and 0.15 pound more when the young were 64 days of age. Both methods of feeding were satisfactory for the does and the young rabbits.

Table 1.—*Effect on condition of does and young of hand-feeding and of hopper-feeding pellets to does the last 17 days of pregnancy*

Item	Lot 1, hopper-fed pellets and access to alfalfa hay	Lot 2, hand-fed 4 ounces pellets and access to alfalfa hay
Does maintained..........number..	16	16
Does replaced during 19-month experiment..do....	22	22
Does replaced per year..........percent..	87	87
Average weight of does:		
At first mating..........pounds..	9. 33	9. 33
When young were 56 days old..........do....	11. 11	11. 32
When young were 64 days old..........do....	11. 21	11. 36
Litters..........number..	90	92
Young retained..........do....	693	693
Young at 56 days..........do....	540	549
Young at 64 days..........do....	528	525
Average weight of young:		
At 56 days of age..........pounds..	3. 87	3. 90
At 64 days of age..........do....	4. 58	4. 57

In both lots 87 percent of the does were replaced on a yearly basis, largely because of metritis, pneumonia, failures to conceive, sore hocks, scabby noses, and abscesses. In commercial herds in southern California, the annual replacement of does averages about 100 percent.

For the last 17 days of the gestation period, filling a feed hopper with pellets once represented a considerable saving of labor over hand-feeding the does once a day. Feeding only alfalfa hay until the does were known to have conceived, palpating them 14 days following mating to determine pregnancy, hopper-feeding the pelleted ration, and allowing free access to alfalfa hay during the last 17 days of gestation and during the nursing period, combined with the use of a labor-saving automatic watering system and self-cleaning hutch floors, required only 5 man-hours of labor per doe per year. This was a saving of 50 percent in the labor that has generally been required in commercial herds.

EFFECT OF METHOD OF FEEDING ON QUANTITY OF FEED REQUIRED TO PRODUCE 1 POUND OF FRYER

During the gestation period the does in lot 1 (table 2) consumed an average of 1.69 more pounds of feed each than those in lot 2. The does in lot 2 consumed more hay. The slight saving of feed in the hand-fed group would not justify the additional labor.

The quantities of feed consumed during the suckling period by rabbits fed by hopper and by hand indicate that the two methods of feeding are equally satisfactory. The does and litters in lots 1 and 2, respectively, required 4.05 and 3.96 pounds of feed to produce 1 pound of fryer from mating of the does to weaning of litters at 56 days of age.

TABLE 2.—*Effect on quantity of feed consumed and amount required to produce 1 pound of fryer at 56 days of age of hand-feeding and hopper-feeding pellets to does the last 17 days of pregnancy*

Item	Lot 1, hopper-fed pellets and access to alfalfa hay	Lot 2, hand-fed 4 ounces pellets and access to alfalfa hay
Average quantity of feed consumed per doe during gestation period:		
Pellets pounds	7.53	4.41
Alfalfa hay do	4.76	6.19
Average ration per doe and litter during suckling period:		
Pellets pounds	91.69	90.90
Alfalfa hay do	10.00	10.63
Feed consumed in producing 1 pound of fryer from mating of doe to weaning of litter at 56 days of age:		
Pellets pounds	3.50	3.33
Alfalfa hay do	.55	.63

EFFECT OF METHOD OF FEEDING ON RETURNS, PER DOE, ABOVE FEED COSTS

In lot 1 (table 3) the quantity of feed consumed per pound of live weight of fryers produced, from the time the does were mated until their young were 56 days of age, was 4.05 pounds of hopper-fed pellets and alfalfa hay, at a feed cost of $0.1312 per pound of live weight. The fryers remained in the hutch with their dams for an additional 8-day feeding period and increased in weight an average of 0.71 pound each during this period. Each pound of increase required 5.39 pounds of feed, costing $0.178 per pound of live weight.

The does and their young in lot 2 consumed 3.96 pounds of feed in producing 1 pound of 56-day-old fryer, at a feed cost of $0.1268 per pound. The total quantity of feed to produce a pound of fryer, live weight, at 64 days of age, was 4.31 pounds, at a cost of $0.1386 per pound. The fryers increased by 0.67 pound during the 8-day additional feeding period and each pound of increase in weight required 7.14 pounds of feed, costing $0.235 per pound of live weight.

The litters in lot 1 had an average market value of $4.93 at 56 days, or a return above feed cost of $1.85. For the litters at 64 days of age, the return was $1.94 above the feed cost, or $0.09 profit per liter for the additional 8 days. The return above feed cost was not sufficient, at 1948—49 prices, to justify the extra labor involved. In addition, there is the hazard of some mortality during the 8 days.

The litters in lot 2 had an average market value of $4.89 at 56 days, or a return above feed cost of $1.94. For the additional 8 days there was a loss of $0.08, due to the death of 13 fryers from enteritis.

The 22 to 24 percent of mortality of the young in the two lots, due to enteritis, enteritis with complications, pneumonia, and abscesses, and occasionally to heat, malocclusion, and accidents, is comparable to that in commercial herds in southern California.

TABLE 3.—*Effect of 2 methods of feeding, for the last 17 days of pregnancy, on returns, above feed costs, for fryer rabbits marketed at 56 and 64 days of age*

Item	Lot 1, hopper-fed pellets and access to alfalfa, marketed at—		Lot 2, hand-fed pellets and access to alfalfa, marketed at—	
	56 days	64 days	56 days	64 days
Young in experiment [1]..........number..	540	528	549	525
Mortality..........percent..	22.01	23.81	20.78	24.24
Fryers:				
Average final weight..........pounds..	3.87	4.58	3.90	4.57
Feed consumed per pound of fryer produced from mating of doe to weaning of litter:				
Pellets:				
Amount..........pounds..	3.50	3.69	3.33	3.66
Cost..........dollars..	[2] 0.1207	0.1273	[2] 0.1149	0.1262
Alfalfa hay:				
Amount..........pounds..	0.55	0.54	0.63	0.65
Cost..........dollars..	0.0105	0.0103	0.0119	0.0124
Feed consumed per pound of fryer produced from 57th to 64th day only:				
Pellets:				
Amount..........pounds..	--------	4.88	--------	6.41
Cost..........dollars..	--------	0.1683	--------	0.2211
Alfalfa:				
Amount..........pounds..	--------	0.51	--------	0.73
Cost..........dollars..	--------	0.0096	--------	0.0138
Litters:				
Average weight per litter..........pounds..	23.48	26.87	23.29	26.06
Market value per litter..........dollars..	[3] 4.93	5.64	[3] 4.89	5.47
Feed cost per litter..........do....	3.08	3.70	2.95	3.61
Returns per litter above feed cost dollars..	1.85	1.94	1.94	1.86
Profit or loss above feed cost for additional 8 days..........dollars..	--------	0.09 (profit)	-------	0.08 (loss)

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[1] A total of 693 young were used in each lot, young being added from time to time as litters were kindled. Figures here indicate those surviving to the market age indicated.

[2] Cost of feed: Pellets, $3.45 per hundredweight; alfalfa, $1.90 per hundredweight.

[3] White fryers at $0.21 per pound.

In both lots young rabbits died at various ages. In determining the quantity of feed required to produce a pound of fryer rabbit, it was impossible to make correction for feed consumed by rabbits that were lost. Twenty-one litters in lot 1, and 19 litters in lot 2, suffered no mortality in the young after the rabbits were 21 days of age, when they had consumed little, if any, feed other than their mothers' milk. In those litters the quantity of feed to produce 1 pound of weaned fryer at 56 days of age was: Lot 1, 2.94 pounds of pellets and 0.41 pound of alfalfa, or a total of 3.35 pounds; lot 2, 2.92 pounds of pellets and 0.42 pound of alfalfa, or a total of 3.34 pounds.

BREEDING SCHEDULE

Effect of Breeding Schedule on Condition of Doe, Development of Young, and Feed Consumed

The rabbits in lots 1 and 3 (table 4) were handled alike, except that, after their first mating, the does in lot 1 were mated 56 days, and those in lot 3, 42 days, following the kindling of the previous litter of each.

The quantity of hay consumed by the does that failed to conceive is not included in the quantity of feed required to produce a pound of fryer.

In lots 1 and 3 (table 4) most of the 42 replacements of does were made because of metritis, pneumonia, and failures to conceive; some because of sore hocks, scabby noses, and abscesses. These normal causes were uniformly distributed between the two lots. The mature weight—11.2 pounds—for the does in both lots indicates that the accelerated breeding schedule had no adverse effect on the does' condition.

Mortality in the young was due to enteritis, enteritis with complications, pneumonia, and abscesses, and occasionally to malocclusion, injury, and peritonitis, uniformly divided between the lots.

The weaned weights of 4.58 and 4.61 for lots 1 and 3, respectively, indicate that the 8- and 6-week breeding schedules of the dams made no significant difference in the development of their offspring.

The gestation and suckling periods overlapped as much as 8 days in lot 1 and 22 days in lot 3; the amounts of feed consumed during these overlapping periods were included in the previous suckling periods. The does in lot 1 consumed an average of 12.29 pounds of feed during the remaining 23 days of their gestation period (31 minus 8); the does in lot 3 consumed an average of 9.30 pounds of feed during their remaining 9 days of gestation (31 minus 22).

During the suckling period the does and litters in both lots consumed 101 pounds of feed. Production of a pound of weaned fryer required 4.23 pounds of feed, costing $0.1376 per pound of live weight, in lot 1 and 4.28 pounds, costing $0.1386, in lot 3. The breeding schedules, therefore, had no significant effect on the amount of feed needed to produce 1 pound of fryer.

Table 4.—*Effect of 56- and 42-day breeding schedules on condition of does, development of young, and feed required to produce a pound of fryer at 64 days of age*

Item	Breeding schedule [1]	
	Lot 1, 56 days	Lot 3, 42 days
Does maintained ... number	16	16
Does replaced ... do	22	20
Does replaced in 12-month period ... percent	87. 0	78. 7
Average weight of does:		
At first mating ... pounds	9. 33	9. 29
When young were 64 days of age ... do	11. 21	11. 22
Litters produced ... number	90	96
Young retained ... do	693	721
Young weaned ... do	540	537
Young mortality ... percent	23. 81	25. 79
Average young retained per litter ... number	7. 70	7. 51
Average young weaned per litter ... do	5. 87	5. 59
Average weight of fryers at 64 days ... pounds	4. 58	4. 61
Average weight of litters at 64 days ... do	26. 87	25. 79
Average feed consumption during portion of gestation period after young of previous litter were marketed:		
Pellets ... pounds	7. 53	5. 31
Alfalfa hay ... do	4. 76	3. 99
Average feed consumption, during suckling period, of doe and litter:		
Pellets ... pounds	91. 69	90. 15
Alfalfa hay ... do	10. 00	11. 08
Feed to produce 1 pound of fryer from mating of doe to weaning of litter:		
Pellets:		
Amount ... pounds	3. 69	3. 70
Cost ... dollars	[2] 0. 1273	[2] 0. 1276
Alfalfa hay:		
Amount ... pounds	0. 54	0. 58
Cost ... dollars	0. 0103	0. 0110

[1] Breeding schedule indicates time between doe's kindling of litter and her subsequent mating.

[2] Cost of feed: Pellets, 3.45 per hundredweight; alfalfa hay, $1.90 per hundredweight.

Effect of Breeding Schedule on Does' Annual Production

Mating the does 56 days after kindling (lot 1, table 5), with a gestation period of 31 to 32 days, made it possible for them to produce 4.2 litters per year if there were no failures to conceive. These does actually produced 3.55 litters, or 84.3 percent of their possible maximum production. Mating those in lot 3, 42 days following kindling made it possible for them to produce 5 litters per year. They produced 3.79 litters, or 75.8 percent of their possible maximum production.

On the 56-day breeding schedule, the does produced 95.4 pounds of fryers; on the 42-day breeding schedule, 97.7 pounds, per year.

Table 5.—*Effect of 56- and 42-day breeding schedules on does' annual production of 64-day-old rabbits*

Item	Breeding schedule [1]	
	Lot 1, 56 days	Lot 3, 42 days
Does maintained ... number	16	16
Matings made ... do	191	197
Conceptions ... do	123	110
Do ... percent	64. 4	55. 8
Possible litters, per doe, per year ... number	4. 20	5. 00
Litters produced, per doe, per year ... do	3. 55	3. 79
Litters produced of maximum number possible ... percent	84. 3	75. 8
Average amount of fryer produced, per doe, per year ... pounds	95. 4	97. 7

[1] Breeding schedule indicates time between doe's kindling of litter and her subsequent mating.

EFFECT OF BREEDING SCHEDULE ON YEARLY RETURNS

The litters of does on the 56-day breeding schedule averaged, at 64 days of age, 1.08 pounds more than those of does on the 42-day schedule (table 6). The litters produced by the does mated on the 56-day breeding schedule brought a return above feed cost of $1.94; litters produced by the does on the 42-day breeding schedule, a return above feed cost of $1.84. With the then prevailing prices of feed and returns for fryers, the difference in returns per doe, per year, above feed cost was not sufficient to offset the additional labor.

Table 6.—*Effect of breeding does on 56-day breeding schedule compared with effect of breeding on 42-day schedule, on yearly returns, above feed costs, for 64-day-old fryers*

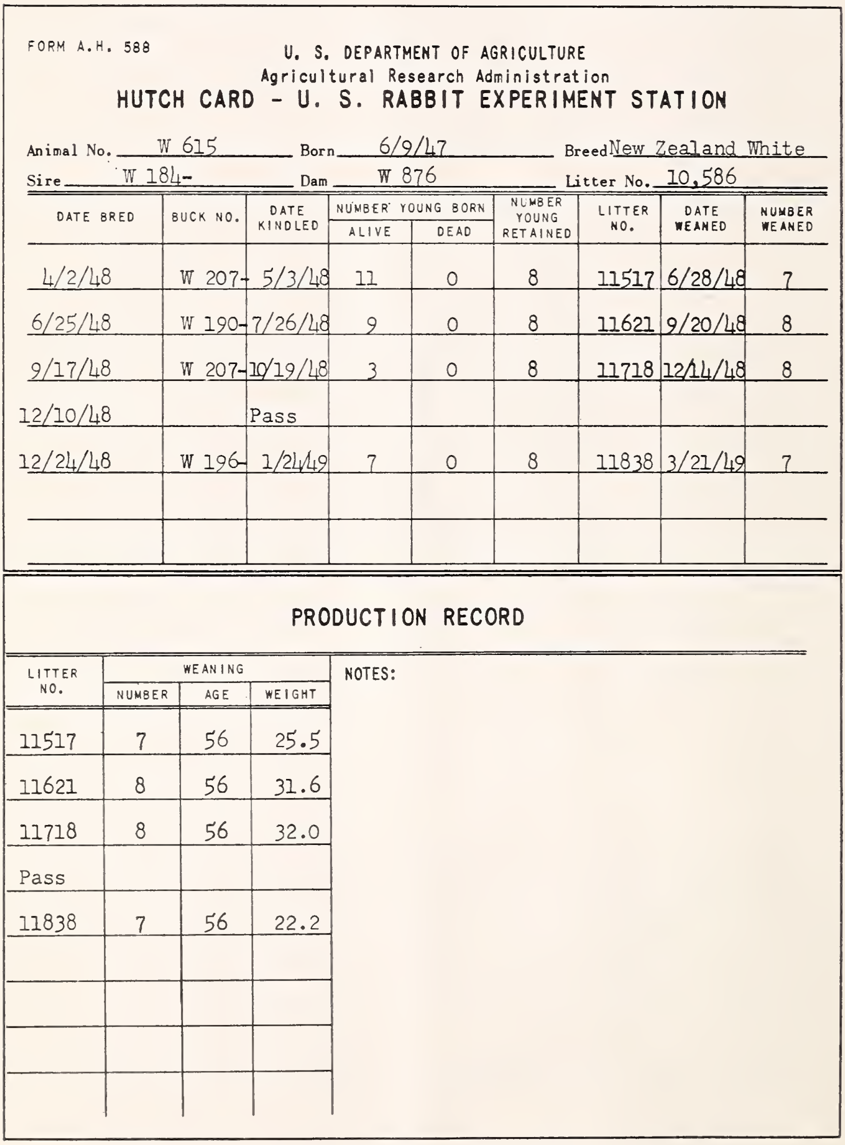
Item	Breeding schedule [1]	
	Lot 1, 56 days	Lot 3, 42 days
Does maintained ... number	16	16
Average weight of litter at 64 days of age ... pounds	26. 87	25. 79
Cost of feed in producing 1 pound of fryer [2] ... dollars	0. 1376	0. 1386
Market value of litter at 21 cents per pound ... do	5. 64	5. 41
Cost of feed for litter ... do	3. 70	3. 57
Returns per litter above feed cost ... do	1. 94	1. 84
Litters produced, per doe, per year ... number	3. 55	3. 79
Returns per doe, per year, above feed cost ... dollars	6. 89	6. 97

[1] Breeding schedule indicates time between doe's kindling of litter and her subsequent mating.
[2] From table 4.

RECORD KEEPING

Record keeping is essential in efficient commercial rabbit production. Records are used in culling unproductive animals, in selecting breeding stock, and in planning matings for improving herd production.

The hutch card (fig. 4) and the buck record card (fig. 5) provide a means for a simple record system.



FORM A.H. 588

U. S. DEPARTMENT OF AGRICULTURE
Agricultural Research Administration
HUTCH CARD - U. S. RABBIT EXPERIMENT STATION

Animal No. W 615 Born 6/9/47 Breed New Zealand White
Sire W 184- Dam W 876 Litter No. 10,586

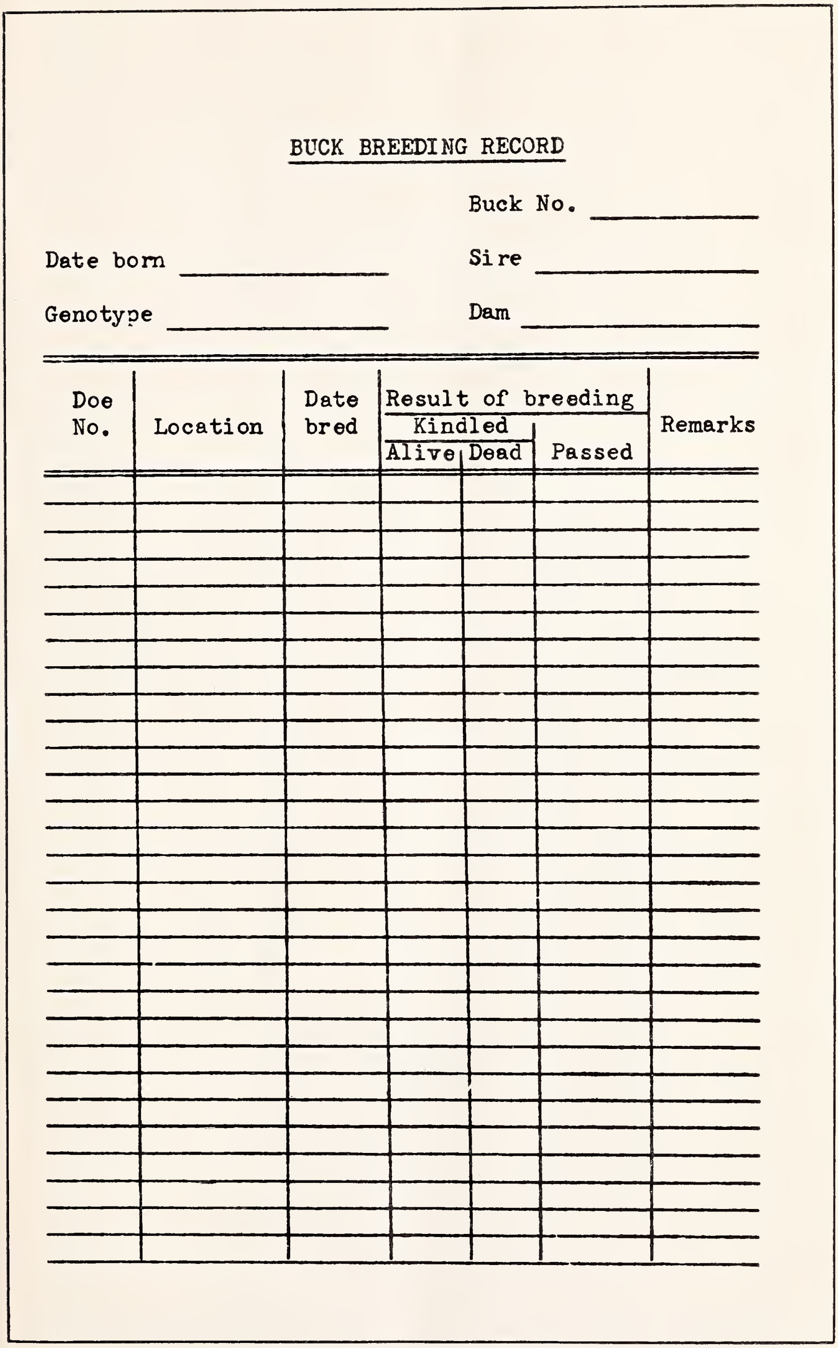
DATE BRED	BUCK NO.	DATE KINDLED	NUMBER YOUNG BORN		NUMBER YOUNG RETAINED	LITTER NO.	DATE WEANED	NUMBER WEANED
			ALIVE	DEAD				
4/2/48	W 207-	5/3/48	11	0	8	11517	6/28/48	7
6/25/48	W 190-	7/26/48	9	0	8	11621	9/20/48	8
9/17/48	W 207-	10/19/48	3	0	8	11718	12/14/48	8
12/10/48		Pass						
12/24/48	W 196-	1/24/49	7	0	8	11838	3/21/49	7

PRODUCTION RECORD

LITTER NO.	WEANING		
	NUMBER	AGE	WEIGHT
11517	7	56	25.5
11621	8	56	31.6
11718	8	56	32.0
Pass			
11838	7	56	22.2

NOTES:

FIGURE 4.—Record card of doe W615, lot 2: Front (top) and back.



BUCK BREEDING RECORD

Buck No. ____________

Date born ____________

Sire ____________

Genotype ____________

Dam ____________

Doe No.	Location	Date bred	Result of breeding			Remarks
			Kindled		Passed	
			Alive	Dead		

Figure 5.—Buck breeding record.

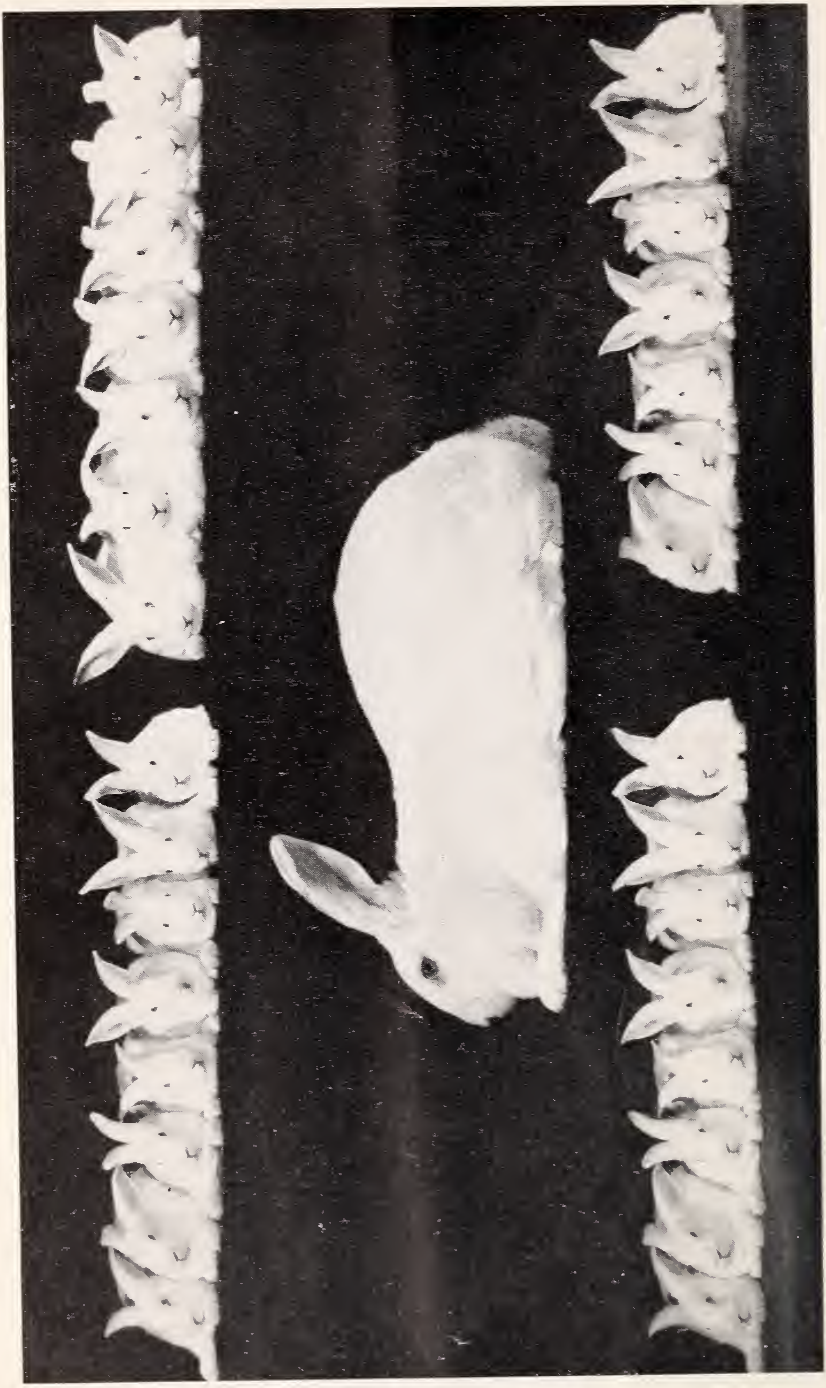


FIGURE 6.—New Zealand White doe and her fryer production for 12 months.

A New Zealand White doe, designated W615, kindled litters of 11, 9, 3, and 7 during a 12-month period (fig. 6). Eight were retained in the first 2 litters, 5 were added in the third and 1 in the fourth to make 8 in each litter. The 30 young that lived to be marketed averaged 3.7 pounds when weaned at 56 days of age. The 12-month production record of approximately 111.3 pounds of fryers equals 1,011.8 percent of the doe's 11-pound live weight.

SUMMARY

Methods of feeding and managing domestic rabbits for commercial fryer production were studied for 19 months at the United States Rabbit Experiment Station, Fontana, Calif., with 48 New Zealand white does and their 278 litters of 2,107 young. The object was to develop methods that would reduce labor, keep does in good condition, and produce fryers of desirable weight most economically.

From weaning at 2 months of age until mated and placed on test at 6 months of age, the junior bucks and does were fed daily 2½ ounces of complete pellets and allowed free access to alfalfa hay. The herd bucks were continued on the same feeding schedule, but the does were allowed access only to alfalfa hay from their mating until it was known that they had conceived, determined by palpation 14 days following mating. For the rest of the gestation period they were either hopper-fed or hand-fed 4 ounces of pellets per day and allowed access to alfalfa hay. Following kindling, the does and litters were hopper-fed pellets and given free access to alfalfa hay.

The two methods of feeding pellets, in a hopper and by hand, proved equally satisfactory with 11-pound does the last 17 days of pregnancy, but hopper-feeding had the advantage of saving labor. Both systems of feeding were satisfactory in fryer production; the young by both methods averaged 3.89 pounds at 56 days of age.

From kindling to 56 days of age, 22 percent of the young died. An additional 2.77 percent died between the fifty-seventh and sixty-fourth days.

From the mating of the does until their litters were weaned at 56 days of age, 4 pounds of feed was required to produce 1 pound of fryer, and 5.39 pounds to produce an additional pound from the fifty-seventh to sixty-fourth day. The additional 8-day feeding period increased the weight of the young by an average of 0.7 pound, or to 4.58 pounds, but with prevailing prices (1948–49) the increased value of a litter for the 8-day feeding period (9 cents) did not justify the additional labor.

Only 3.35 pounds of feed was required to produce 1 pound of fryer at 56 days of age with litters having no mortality after 21 days of age.

The condition of the doe, weight of 64-day-old fryers, and feed required to produce 1 pound of such fryer were not appreciably influenced by a breeding schedule of 56 or 42 days. Conception, however, was 8.6 percent higher for the does bred on the 56-day schedule.

The annual production of does on the 56-day breeding schedule was 95.4 pounds; of those on the 42-day schedule it was 97.7 pounds. With the prevailing prices of feed and fryers, returns for the additional annual production of 2.3 pounds of fryers produced on the 42-day breeding schedule would not justify the additional labor.

The practice of feeding only alfalfa hay until the does are known to have conceived, as determined by palpating them 14 days following mating, hopper-feeding the pelleted ration, and allowing access to alfalfa hay during the remainder of the gestation and the nursing period, combined with the use of a labor-saving automatic watering system and self-cleaning hutch floors, required 5 man-hours of labor per doe per year. This is a saving of 50 percent in labor over that generally required in commercial herds.

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